



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAWN R. GALLAGHER
COMMISSIONER

March 12, 2004

Mr. Orlando Monaco
Department of Navy
Engineering Field Activity-Northeast
Code 1823/OM
10 Industrial Highway, Mailstop 82
Lester, PA 19113-2090

Re: Site 9, Monitoring Event 23-September/October 2003
Naval Air Station, Brunswick, Maine

Dear Mr. Monaco:

The Maine Department of Environmental Protection (MEDEP) has reviewed the draft Monitoring Event 23 Report-September/October 2003 for Site 9, dated February 2004, prepared by EA Engineering, Science and Technology. Based on that review MEDEP has the following comments and issues.

Specific Comments:

1. Section 1.2.2, Results, p. 2:

- a.) "These elevation data are incorrect; the correct elevation is slightly different at 60.54 ft mean sea level (this discrepancy is noted in Table 3)."

The discrepancy was not noted in Table 3, as either an asterisk or a written comment under 'Notes'. Please add the appropriate note to the table. (ED)

- b.) "The depth to water reading for stream gauge SG-1C was recorded as 5.23 ft. The data are considered to be questionable, as the reading is approximately 2.38 ft lower than was previously recorded, and shows considerable variation compared to historical data from that stream location."

The report contains inconsistencies that cast doubt on the conclusion that the field reading is not reliable. First, no comment or footnote was recorded by the field personnel on the typed table in Appendix E.1. Therefore, the field measurement was apparently not questioned at the time of measurement. Secondly, a seemingly unrelated value (42.34) was entered in Table 2 for the water table elevation of SG-1C. If the field measurement shown in Table 2 of 5.23 were used, the water table (pond) elevation would be 37.18 ft. This figure appears to be "approximately 2.38 ft lower than previously recorded". Although Note 2 in Figure 3 states that 2.66 inches of rain was recorded over the period of a week before the gauging, the summer was unusually dry beforehand, and therefore, the pond may have been very low

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 764-1507

preceding the September rain. On the other hand, Note 3 in Figure 3 says "surface of upper impoundment is approximately 3 ft above lower impoundment pond". This is exactly the same statement that appears in Figure 3 notes for Monitoring Events 21 and 22. These problems seem to discredit the report compilation and text more than the field measurement. MEDEP learned from the Brunswick Environmental Office that the upper pond was not purposely lowered in 2003, and that the subsurface pipe input only drains surface water from the flightline and roadways. Unless the Navy can provide creditable backup, MEDEP will believe that the field measurement, was accurate indicating that the upper pond was very low. If the field measurement is determined to be valid, Figure 3 contours need to be modified to account for a usually low pond elevation. (RR)

2. Section 1.4.1, Sampling Activities, p. 4 and 5:

Six bullets describe some differences in field parameter measurements between those recorded for Monitoring Event 22 and Monitoring Event 23. Most of these parameters can be expected to fluctuate between the spring event and fall event, due to variations in recharge of groundwater and its temperature in-situ, as the report suggests. Therefore the value of comparisons to the last event only are questionable. A better analysis would be to draw comparisons to the historical range in each parameter's recorded fluctuations, which would identify abnormal conditions.

Another interesting comparison is the relationship between parameter values when collected by low-flow versus diffusion samplers. For example, in Table 4 dissolved oxygen is given as 0.80 mg/L for the low-flow sample for MW-NASB-069 and as 5.26 mg/L for the diffusion sampler. This difference is very significant. Either the groundwater is nearly depleted of oxygen or else it is in the normal range for the warmer fall groundwater. The Navy needs to analyze the circumstances of collection, and state which value it believes actually represents in-situ groundwater at MW-NASB-069. Also of interest in Table 4 are the relatively high groundwater temperatures for MW-NASB-069, MW-NASB-070, and especially MW-NASB-079. These wells can be construed as located close and downgradient of the Site 9 landfill, and possibly the higher temperatures may represent biodegradation of buried wastes. (RR)

3. Section 1.6, Visual Inspection, p. 6:

Please state that the field site inspection form can be found in Appendix F. (ED)

4. Section 1.7, Quality Assurance/Quality Control, p. 6, 2nd sentence:

"... to evaluate the effectiveness of the remedial action (i.e., monitored natural attenuation)."

Page 14 of this report correctly states the remedial action as "natural attenuation with long-term monitoring". Please correct the language on page 6 to match that on page 14. (ED)

5. Section 2.2.2.1, Volatiles, p. 9, 1st paragraph:

"The spike in vinyl chloride concentrations, particularly noted at MW-NASB-069, appears to have reached a maximum in 2001, and has subsequently been stable or is decreasing."

The above statement is a valid statement for concentration data collected by the low-flow method (Figure 16, Appendix C). However, it is disturbing to find that it does not apply to the concentration trends for either the shallow or deep diffusion sampler data (Figures 17 and 19, respectively). The diffusion data show a peak in late 2001-early 2002, followed by steep

decline over the next two events, and then by a sharp rise for Event 23. MEDEP has questioned the diffusion data for this well for Monitoring Event 22, which differed greatly from the low-flow result. As request in MEDEP comments for Monitoring Event 22 MEDEP would like to discuss the disparity between low flow sampling and diffusion sampling. (MTG)

6. Section 2.2.2.1, Volatiles, p. 9, 5th paragraph:

"Based on groundwater data collected during historical monitoring events, the vinyl chloride plume at Site 9 is limited to the central portion of the site, although data from a recent direct-push sampling investigation indicated low concentrations of vinyl chloride ($7.1 \mu\text{g/L}$) between MW-NASB-071 and MW-NASB-076."

This statement is true for sampling events in 2000's, but is not accurate for characterizing the long-term historical extent of the vinyl chloride plume. The following wells have experienced vinyl chloride maximums as follows: MW-NASB-072 ($9 \mu\text{g/L}$), MW-NASB-074 ($4 \mu\text{g/L}$), MW-NASB-075 ($13 \mu\text{g/L}$), MW-NASB-076 ($15 \mu\text{g/L}$), MW-NASB-080 ($9 \mu\text{g/L}$). The above text needs to be revised. (ED)

7. Section 2.2.2.1, Volatiles, p. 10, 2nd bullet:

"Trichlorofluoromethane has decreased from $400 \mu\text{g/L}$ to $19 \mu\text{g/L}$. This compound is not in exceedance of regulatory criteria."

a.) To the best of our knowledge, neither the USEPA nor MEDEP has a promulgated drinking water guideline for trichlorofluoromethane. However, the Maine Department of Human Services, Bureau of Health (BOH) issued MEGs for trichlorofluoromethane in January 2000 with a value of $2100 \mu\text{g/L}$ for therefor it is well below its BOH's standard. (NR)

b.) Trichlorofluoromethane ($19 \mu\text{g/L}$) are not listed in Table B-1 (Summary of Groundwater Samples, Volatile Organic Compounds). Please add this detection. (ED)

8. Section 2.2.3, Inorganics, p. 12, 2nd bullet:

"... however, antimony is now in exceedance of the State MEG."

The reported concentration of antimony is $5.3\text{B} \mu\text{g/L}$. The qualifier "B" means that it is between the IDL and CRDL, which implies a low level of accuracy. The MEG is $2.8 \mu\text{g/L}$ and the MCL is $6 \mu\text{g/L}$. If the next monitoring event finds that antimony is at, or above, the MCL, this element should be added to the inorganic trend graph for MW-NASB-069 in Appendix C. (RR)

9. Section 3.1, General Conclusions and Recommendations, p. 14, 1st bullet:

"Recent direct-push sampling of Site 9 groundwater did not locate significant concentrations of VOCs in site groundwater inside or outside the area being monitored. Based on available site groundwater data from the long-term monitoring network, the extent of vinyl chloride plume is well delineated (both upgradient and downgradient of Site 9) and no additional monitoring points are required."

This conclusion cannot be drawn at this time. Vinyl chloride and TCE were found at new locations over their MCLs and MEGs, although still at relatively low levels, therefore the Navy has agreed to sample at two additional locations prior to agreeing that the plume is fully delineated. Please either delete the above statements or rewrite so as not to draw a final conclusion. (ED)

10. Section 3.2, Long-Term Monitoring Goals, p. 14, 1st bullet:

"Based on long-term monitoring data collected since 1995, the vinyl chloride plume appears to be stable in size with decreases noted during the last 2 years of sampling."

This sentence is internally self-contradictory. The plume cannot be stable and decreasing in the same time frame. Please clarify the meaning of this statement. (ED)

11. Section 3.2, Long-Term Monitoring Goals, p. 15, 2nd to last bullet:

"Overall concentrations of this compound have been steady or decreasing in recent sampling events, and have shown significant decreases since maximum concentrations were noted in 2001 and 2002."

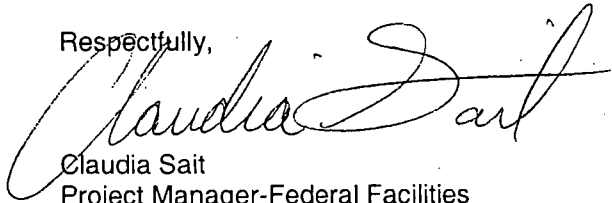
Again, another statement that appears to be internally inconsistent and contradictory. If concentrations have been steady in recent events then apparently natural attenuation has not been successful. The claim of "significant decreases" must be based on the key contaminated monitoring well (MW-NASB-069). The graph in Figure 16 of Appendix C (low-flow results for this well) shows a slight decreasing trend since the spring of 2002. However, the shallow and deep diffusion sampler graphs (Figures 17 and 19) show a significant rebound in Monitoring Event 23 from a sharp decline that is not supported by the low-flow concentration data. Please refer to Comment 5 above. This goal might be better evaluated by summarizing the graphs of total site vinyl chloride and 1,2-DCE in groundwater monitoring well samples (Figure 5). The summation graph indicates that these two contaminants are now back down to levels recorded in January 1995. The above quoted statement must be deleted or modified to be clearly based on what the Navy considers to be the most defensible interpretation of confusing data. MEDEP believes that the impact of remedial activities at the upgradient NEX likely accounts for the substantially higher concentrations between 1999 and 2003. (RR)

12. Table B-3, Summary of Groundwater Samples for Target Analyte List Elements:

With very low dissolved oxygen in groundwater under some areas of Site 9, arsenic should be added to the analyte list for analysis to determine whether arsenic either natural or from the landfill has been mobilized. (RR)

Thank you for the opportunity to review this report. If you have any questions or comments please call me at (207) 287-7713 or email me at claudia.b.sait@maine.gov.

Respectfully,


Claudia Sait
Project Manager-Federal Facilities
Bureau of Remediation & Waste Management

Cf: File
Anthony Williams-BNAS
Carolyn Lepage-Lepage Environmental
Darren Gainer -ECC (email only)

Larry Dearborn-DEP
Christine Williams-EPA
Al Easterday-EA
Ed Benedikt